How to Write an Abstract

General Definition

An abstract is a condensed or summary version of an original work: a book, journal article, technical report, patent, oral presentation, or even an interview. An abstract gives enough about the original work so the reader can make an informed decision about whether to read the full work (or attend the complete presentation) to obtain more detail.

Why is an Abstract Important?

In many fields, it is important to read a great amount of information to keep informed with rapid changes in today's complex world. Professionals in many fields (medicine, law, library science, sociology, biological science, chemistry, etc.) read abstracts to shorten search and reading time and remain current with new, old, and foreign research and scholarship. Abstracts can drastically shorten the search and reading time spent by busy readers.

The abstract is usually the first piece of a larger work that is read by anyone. And because abstracts are more widely published than full papers, conclusions about the rest of the original work are usually made after reading the abstract.

Abstracts are published in professional journals and by abstracting services such as *Chemical Abstracts*, *Cambridge Scientific Abstracts*, *Water Resources Abstracts*, among many others.

Three Major Types

Descriptive or Indicative—This type states briefly what subject areas are dealt with in the original work. It is an extended statement of purpose or scope, often fewer than 100 words. Such an abstract is only useful for a very long report, because it demonstrates only the paper's organization, not its content.

Informative—This type summarizes the essential information in the original work and is usually 150 to 300 words. It assists readers in deciding whether to read the full paper. It is often published alone in secondary sources of information.

Critical or Evaluative— Describes and evaluates the content of the original work. This type is seldom used.

How to Write an Informative Abstract

A good informative abstract should be accurate, self-contained, concise, and specific. It should provide a *brief* summary of each of the main sections of the paper, traditionally the Introduction, Methods, Results, and Discussion.

If you will be writing abstracts for submissions to meetings, these serve a somewhat different purpose. Because the reader doesn't expect the results to be all worked out, it is more important to focus on the *significance of the idea and how you will improve existing knowledge*. In this case, a few citations may be warranted, enough to identify the literature to which you are contributing and to explain how your approach differs from others.

How to Write an Abstract

Format and Style

- Include the title of the work being abstracted.
- Include the author's name, affiliation, and pertinent contact information
- Format the abstract as one, single-spaced paragraph.
- Write the abstract in the past tense because it refers to work completed.
- Do not use abbreviations, acronyms, headings, references, tables, or figures in the abstract. Unless a long tem is used several times, do not abbreviate the term.
- Aim for a length of 150 to 250 words. Do not exceed 300 words.

Content

- Make each sentence maximally informative, especially the topic sentence, which should identify the main idea or subject matter.
- State the principal objectives and scope of the investigation.
- Briefly describe the methods.
- Summarize the results.
- State the principal conclusions or recommendations.
- The abstract must be understandable without reference to the text. Avoid using statements such as " will be presented" or " will be discussed."
- Do not give any information or conclusion that is not also stated in the paper or presentation.

Questions to Answer When Writing the Abstract

- Does the title indicate the question or method investigated?
- What is the general topic you were investigating and why is it important?
- What are the specific questions you are addressing with your research?
- How did you conduct the experiment?
- What did you find out?
- What do you conclude or recommend about the general topic or question?

Suggestions for Writing and Editing the Abstract

- Write the abstract after you have prepared your paper or presentation.
- Look to the introduction, methods, results, and discussion sections in the presentation or paper for inspiration. Also look for recommendation and conclusion statements.
- For the first draft, make up one or two sentence to answer each of the questions above. Do not try to make a neat sentence at first. Just jot down the idea you want to get across.

- Keep the sentences separate until you are satisfied with all of them, then combine them.
- Use active voice and simple sentences. Be accurate, brief, and specific.
- Use language that is familiar to the potential reader.
- Read through the whole abstract and change sentences around to make them flow easily, have logical order and good transition.
- Revise and rewrite. If you end up writing every sentence four times, that's fine, as they should get better each time.
- Have someone else read it. Ask if they can give you the answers to the questions listed in the preceding section. Delete extraneous information.
- Reread the abstract several days after writing it. Review for use of correct format. Further delete extraneous information.

Sample Abstracts

Review the abstracts below and see if you can identify the specific parts discussed above. What questions are answered or unanswered? How could the abstract be improved?

Effect of Owner Education Level on Number of Cats per Household

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Education level may affect choices people make about their personal lives and habits. We investigated the relationship beween education level and the number of cates per household for residents of a small town. The residents of a small town in North Carolina were polled as to the number of years of education for adults in households and the number of cats associated with the household. Adults with either low education levels (0-10 years of school) and those with high education levels (more than 16 years of school) had significantly more cats per house hold than those with intermediate education levels (11-16 years of school) when analyzed by the statistical test ANOVA ($P < 0.005$). This is highlighted by noting that those with high or low education levels were more likely to have 4 or more cats (23%) than those with intermediate education (4%). We concluded that education level can affect choices not directly associated with academic pursuits.

Breached Levee Restoration May Not Benefit Native Fish of the Sacramento-San Joaquin Delta

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The California Sacramento-San Joaquin Delta supports a diverse native fish population that has declined substantially in recent years. Some think breaching levees around agricultural islands will restore shallow water habitat and increase spawning, rearing, and refuge habitat for native fish in tidal, perennial wetlands of the delta. We examined this theory by investigating fish assemblages, habitat associations, and abundance in previously breached agricultural flooded islands, which ranged between 16 and 66 years since inundation, and a nearby reference site, which was continuously inundated by tidal action. Preliminary data show introduced fish are more abundant both monthly and seasonally at all sites, and physical attributes, especially temperature and submerged vegetation, are important factors in determining fish abundance and distribution within the flooded islands. Native fish spawned and reared during a narrow window in the early spring months in cool temperatures from 10 to 18 ^{o}C. Introduced fish spawned and reared from late spring into early fall in warm temperatures from 15 to 25 ^{o}C. We found significantly (ANOVA, $P < 0.05$) higher densities of resident native and introduced fish associated with submerged aquatic vegetation and significantly (ANOVA $P < 0.05$) higher densities of native and introduced migratory fish associated with open, unvegetated shallow water habitats. We also documented introduced fish preying on native fish. Our data suggest native fish may not benefit from breached levee restoration because introduced species dominate tidal perennial flooded islands, native fish spawn and rear within a relatively narrow period, and introduced fish prey on native fish.